Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_ Per.: \_\_\_\_\_\_\_\_

**5.2 Similar Polygons**

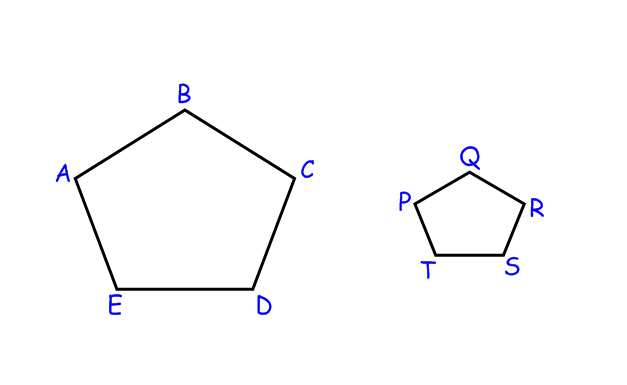
Two polygons are ***similar*** if their vertices can be paired such that:

1) their corresponding angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

2) their corresponding sides are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Another way to think about similar polygons:

When you name similar polygons, their corresponding vertices must be named in the same order.



For example, if polygon **ABCDE** above is similar to polygon **PQRST**, then we know that:

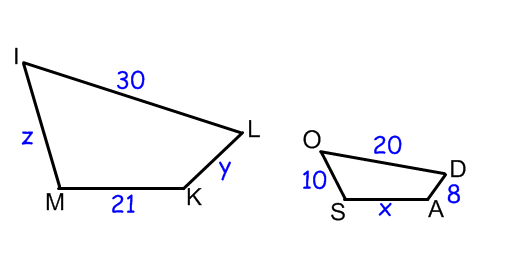
1)   

2)   

The ratio of the sides is called the **scale factor**. If, in the polygon above, AB were 12 and PQ were 8, then the **scale factor** or would be

The symbol for similar is **~ .**

Example:



Quad. MILK ~ Quad. SODA

Find:

a. scale factor

b. the values of x, y, and z

c. the perimeters of the two quadrilaterals

d. the ratio of the perimeters

What can you conclude about the ratio of the sides and the ratio of the perimeters?

Tell whether the two polygons are always, sometimes, or never similar:

1. \_\_\_\_\_\_\_\_ two equilateral triangles

2. \_\_\_\_\_\_\_\_ two right triangles

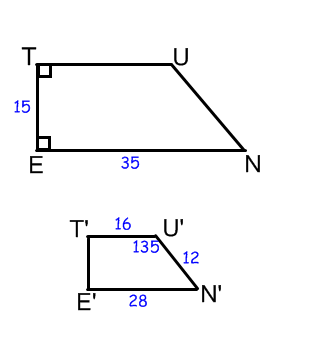
3. \_\_\_\_\_\_\_\_ two squares

4. \_\_\_\_\_\_\_\_ two rectangles

5. \_\_\_\_\_\_\_\_ two regular hexagons

6. \_\_\_\_\_\_\_\_ a right triangle and an acute triangle

7. \_\_\_\_\_\_\_\_ an isosceles triangle and a right triangle



Quad.  Quad. 

1. What is their scale factor?

2. What kind of quadrilateral must these be?

3. Find: a. the measure of  b. the measure of 

c. TU d. 

e. UN f. the ratio of the perimeters

Three sets of two similar polygons are shown. Find the values of x, y, and z for each set:

